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Implementing Quality Improvement Techniques for Health Care in Suez Governorate, Egypt

April 2005

Prepared by:

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Mission

Partners for Health Reformplus is USAID's flagship project for health policy and health system strengthening in developing and transitional countries. The five-year project (2000-2005) builds on the predecessor Partnerships for Health Reform Project, continuing PHR's focus on health policy, financing, and organization, with new emphasis on community participation, infectious disease surveillance, and information systems that support the management and delivery of appropriate health services. PHRplus will focus on the following results:

- *Implementation of appropriate health system reform.*
- *Generation of new financing for health care, as well as more effective use of existing funds.*
- *Design and implementation of health information systems for disease surveillance.*
- *Delivery of quality services by health workers.*
- *Availability and appropriate use of health commodities.*

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Abstract

This paper is a brief synopsis of quality improvement (QI) work carried out in the Suez governorate of Egypt, as part of that country's Health Sector Reform Program. QI teams were organized at the health district and facility levels. Teams were introduced to the "culture of quality" concept and to QI problem analysis tools that allowed them to use data to identify specific problems and their causes, and then to resolve the problems. Behavior change, such as working as a team, sharing responsibility, solving problems from within, and treating patients with respect, was a major element in the QI reform. Managers and clinic staff reported increased capacity to more widely implement the QI techniques, improved technical performance of health care staff, and better-informed and satisfied patients.

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Acronyms

FACT	Feedback, Analytical, and Comparison Tool
FHU	Family Health Unit
MOHP	Ministry of Health and Population
PHC	Primary Health Care
PHR*plus*	Partners for Health Reform*plus*
QI	Quality Improvement
TA	Technical Assistance
TSO	Technical Support Office

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The report writing was done by Louise Kemprecos. Key contributors from PHR*plus* are Nadwa Rafeh and Mahmoud Farag.

1. Introduction

1.1 Background

The Partners for Health Reform*plus* (PHR*plus*) Project contributes to the Focus on Family Health component of the U.S. Agency for International Development mission's Strategic Objective 20: Healthy, Planned, Families. Focus on Family Health and PHR*plus* support implementation of a far-reaching government of Egypt (GOE) health sector reform program. Begun in 1996, health reforms are in the seventh year of a 15–20 year program, with concentration during the next several years on implementing new service delivery arrangements and financing/insurance systems in rural and urban governorates/districts. The objective is to introduce rational financial systems for curative outpatient care in primary health care (PHC) clinics based on improved quality.

Quality improvement (QI) is an integral part of the reform model in Egypt. While the Ministry of Health and Population (MOHP) has made significant strides in the past few years in the development of a QI program, health facilities still face significant challenges in improving the quality of services and in building its capacity in this area. Clinical practices do not meet national standards, external (patient) and internal client (provider) satisfaction is low, and resources are used inefficiently. To this end, QI became one of the main objectives of the reform program. In fact, improving the quality of care is the basis for the new model, filtering into the reform model in three different ways: 1) reformed clinics are marketed to the community based on improvement in quality of care; 2) reformed clinics have to demonstrate quality improvement through accreditation in order for them to contract with financing agency; and 3) incentive payments to providers is based on the quality of care they provide.

Since 2003, PHR*plus* has been providing technical assistance to the Health Sector Reform Program focusing on implementing and refining the reform model in the governorate of Suez. Suez governorate has a population of about 500,000 living in four districts, and a total of 34 PHC clinics. Quality improvement became an important component of PHR*plus* two-year strategy.

1.2 Objectives of the PHR*plus* Quality Component

The objectives of the PHR*plus* work in quality improvement are to improve the quality of care, raise the levels of client satisfaction, and achieve improved health status indicators. To achieve these objectives, the PHR*plus* QI plan was designed to:

1. Build capacity for QI at the district and clinic level
2. Build a culture of quality at the district and clinic level
3. Develop a QI program in each clinic

PHR*plus* began this work by analyzing the current situation in Suez governorate, in order to gauge the current levels of the quality of care and client satisfaction, and to design interventions based on needs.

The first analysis of the situation started in October 2003. The quality of care at the 34 primary health clinics in Suez governorate was assessed using PHC accreditation standards to obtain an overall picture of the standard of care. The standards measure eight key dimensions: patient rights, patient care of the most common cases in primary care, safety (environmental, clinical, and employee health), support services (medical and non-medical), the QI program, information management, facility management, and the family practice model. At that time, the best clinics achieved around 30 percent on the assessment, indicating low levels of quality.

Another important analysis of the situation in Suez included a client satisfaction questionnaire. External client satisfaction questionnaires were implemented at 15 clinics in March 2004, and feedback on the level of internal client satisfaction was gathered in March 2004. Both groups of clients indicated a low level of satisfaction with the quality level of services.

Due to the lack of medical record keeping, data were not available to investigate the quality of clinical care such as the proportion of women receiving the recommended number of prenatal visits or the proportion of hypertensive patients with controlled blood pressure. To address this problem, a user-friendly computer program was developed. The purpose of this program is to collect basic data on patient visits and provide feedback to clinicians concerning practice patterns.

2. Approach and Methodology

As indicated earlier, one of the main objectives of the QI plan was to build capacity for QI at the district and clinic level. This is essential to ensure that all stakeholders, including those who are providing services as well as monitoring it at district level, understand the meaning of quality, understand its analytical tools, and have the expertise to make it operational.

In order to **build capacity for QI at the district and clinic level**, two groups of MOHP staff were targeted for training: middle management and clinic staff.

- Middle managers were judged important because they supervise and have authority to implement QI work. They were staff of the MOHP's Technical Support Team (TST) and members of Suez governorate's four district teams – the key district-level MOHP staff. This was the first time that these teams were introduced to the concept of QI.
- Clinic staff were operating along the lines of the traditional medical hierarchy, in which staff do not work together as a team of equals. Moreover, due to lack of provider satisfaction, there was little team spirit.

Dr. Amal El-Raei, cirector of El-Haweiss Family Health Center, says that she is now managing her clinic as a coach, rather than a top-down director.

2.1 Creating a Culture of Quality

At the end of the project, PHR*plus* asked the leader of the Suez district team, Dr. Mervat Abdel Salaam, how her role had changed through her work in QI. Her response was: "Are you kidding?! I've applied QI to my own household! At work, I don't accept less than 100 percent effort from my staff or myself."

Before beginning to teach middle management and clinic staff specific QI skills, it was necessary to help create a **culture of quality**. A culture of quality is one in which all staff are knowledgeable about and understand quality, have the tools and techniques to implement quality improvements, have changed their behaviors to contribute to quality improvements, are skilled at using data to make decisions, feel that problem solving should be initiated from within an organization, treat their clients with respect, and expect everyone else in the organization to share responsibility in quality improvement.

At the level of middle management, a culture of quality is one in which permanent MOHP district-level staff are committed to, and actively engaged in, backing up the clinic-level QI teams. To do so, the district-level team must speak two "languages" – the language of the clinic and the language of upper-level management. This way, the district team is able to liaise well between the clinic and upper management, transferring to upper management the requests made by clinic-level QI teams.

At the clinic level, a culture of quality is one in which every staff member, at all levels of the hierarchy, is fully committed to, and actively engaged in, QI. In this culture, staff actively work to solve problems, develop solutions that are based on evidence, not opinion, and actively seek the assistance of middle management to resolve outstanding issues.

The objective is for quality improvement teams at clinics to be able to work independently and to analyze and solve problems without technical assistance.

2.2 Building Capacity for Quality Improvement

PHR*plus* believed that, to change the existing culture and increase the capacity for QI, all staff members would need to understand their roles in improving quality. This requires a great deal of training of staff from several members of the medical hierarchy in new ways of thinking and approaches to teamwork and problem-solving. Therefore, a rigorous training plan was developed targeting a variety of staff categories among middle managers, and all staff categories in clinics: clinicians, managers, support staff, and administrators.

PHR*plus* also believed that to achieve sustainable capacity building, innovative and efficient training methodologies should be used. Hence, several approaches were used to the build skills in the area of quality including home study, e-learning courses, and group studies.

Seven middle managers were selected from the TST governorate office and from each MOHP district office. Middle managers received training the concept of quality and how to implement quality improvement by improving their own performance as managers. With improved performance, the process of working with a variety of levels of clinic staff to generate and prioritize ideas and suggestions would be more respectful and acceptable than the older, top-down style of management.

Mid-level managers were trained in various tools of performance improvement focusing on methods for:

1. Collecting data from a variety of sources
2. Generating ideas (e.g., brainstorming the five "whys" – "Why did this problem happen," "why didn't we realize that we had a problem," etc.)
3. Decision-making tools (e.g., voting, priority matrix, pair-wise ranking, benchmarking, and force field analysis)
4. Problem analysis tools (flow chart, fish bone cause and effect diagram, and Pareto chart)
5. Refining the problem statement to be more specific and quantifiable, and setting a time-constrained quantifiable target
6. Analyzing data (e.g., check sheet, histogram, and run chart)
7. Implementing changes
8. Measuring change

They were also trained on two types of communication skills; how to communicate with providers not as supervisors or inspectors, but as coaches; and how to communicate more effectively with upper-level management. This included training on how to get upper-level management's attention by presenting concise information on what they want and why it is needed.

Middle managers were also trained on the concept of the PHC accreditation program so they could better assist facilities prepare for accreditation and oversee its implemented effectively.

At the clinic level, all staff were trained in the basics of QI. QI teams were then organized in the clinics by asking interested and qualified staff members to join. Over a period of five months, QI teams in each clinic were established, headed by the clinic director and managed by a QI coordinator. Once these teams were established, efforts to develop their QI capacity by coaching and mentoring teams were continued.

The objective of this training was that each clinic's QI team would learn how to identify, analyze, and prioritize opportunities for quality improvement, and how to work closely with middle management to implement changes to achieve quality improvement without technical assistance. They were introduced to data collection and analysis tools that would facilitate the process. Specifically, teams were trained on:

- Basics of quality improvement
- Quality improvement tools
    - Collecting data from a variety of sources
    - Generating ideas
    - Decision-making tools
    - Problem analysis tools
    - Refining the problem statement to be more specific and quantifiable, and setting a time-constrained quantifiable target
    - Analyzing data
    - Implementing changes
    - Measuring change
- Personal communication skills: a) how to communicate with patients as members of a family rather than a case; b) how to communicate with every other clinic staff member as an equal and work together as a team; and c) how to present supervisors with suggested ways of solving problems instead of presenting supervisors with unsolved problems
- Clinical guidelines for the most commonly seen cases at PHC clinics
- PHC accreditation tools – the criteria according to which the clinic will be assessed, the levels of accreditation that can be achieved, and the effect of accreditation on the clinic
- Long-term QI planning: how to sustain the implementation of QI programs, how to work as a team.

To remedy the lack of data to improve clinical performance, PHR*plus* computerized the medical record, developing an Access-based program called FACT (Feedback, Analytical, and Comparison Tool). Without the information generated by this system, the QI team was unable to prioritize clinical problems, develop efficient solutions, and track whether the modifications were having the desired result. FACT data are also used by middle managers to compare the clinical performance of physicians at different clinics, and also between clinics in different districts. The incentive payment system is based on clinical performance indicators drawn from FACT.

With a culture of quality established at each clinic, PHR*plus* trained the QI team on how to **develop their own QI programs**. To do so, they were trained on setting a mission, vision, and goals for themselves. They then set an action plan to improve their performance, and assigned each item in the action plan to one of their team members. Each action plan incorporates routine internal reviews and audits, based on clinical and non-clinical indicators selected by the staff themselves. The action plan also lists some issues the QI team would like to address, and, as the team addresses each issue, the team develops a QI project to analyze and resolve a selected issue.

Table 1 demonstrates how QI teams are beginning to work independently, without technical assistance. While the initial action plans were all completed with technical assistance, seven clinics have gone on to develop subsequent action plans without technical assistance. Similarly, while all QI teams have developed one or more QI projects with technical assistance, teams at seven clinics have gone on to develop one or more projects without technical assistance.

Table 1. Implementation of action plans and QI projects with and without technical assistance (TA)

			Implemented action plan		Implemented QI project		
District	**Clinic**	**Date of training**	**With TA**	**With no TA**	**With TA**	**With no TA**	**Total QI projects**
AlArbeyeen	Iman	Apr-04	x		1		1
AlArbeyeen	Muthallath	Apr-04	x		1		1
AlArbeyeen	Sadat	Apr-04	x	x	1	1	2
Ataqa	Mubarak	Apr-04	x	x	2		2
Ataqa	Mustaqbal	Apr-04	x	x	1	1	2
Ataqa	Oct. 24th	Apr-04	x	x	2	1	3
ElGanayen	Mashrou	Apr-04	x	x	2	1	3
Suez	Suez	Apr-04	x	x	3	1	4
AlArbeyeen	ElHaweis	Oct-04	x	x	1	1	2
Ataqa	ElAmal	Oct-04	x		1		1
Ataqa	ElHirafiyin	Oct-04	x		1		1
Ataqa	ElSafa	Oct-04	x		1		1
Ataqa	ElTawfiq	Oct-04	x		1		1
Total number of QI projects							24

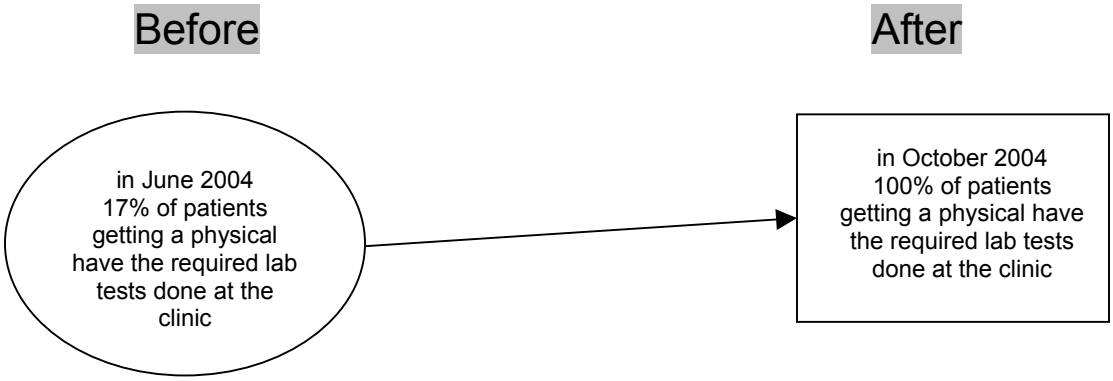
3. Facility Case Studies

This chapter reviews the achievements of two QI projects in two clinics. In each case, the QI team began by brainstorming and drawing up a "wish list" of problems they would like to solve, whittling it down by using criteria that would ensure they select a problem that can be resolved within a three-month timeframe, one for which data were available to assist in problem-solving, and one whose resolution would positively impact the quality of patient care. In each case, the team used a wide variety of analytical tools to prioritize and to analyze problems.

3.1 Improving Continuity of Care at El- Suez Family Health Unit

El-Suez Family Health Unit (FHU) serves an urban population of about 5,566. The quality improvement team at Suez FHU is led by the clinic director, who also led the working group that developed the improvement project described here. The QI project was undertaken with technical assistance from the district team.

Figure 1. Continuity of care is improved when laboratory tests are conducted on the spot



At their first meeting to discuss quality improvement, the team identified 15 quality areas for improvement. These included overcrowding, lack of training in infection control, lack of equipment maintenance, the low use of lab, understaffing, lack of job descriptions, and others. The list of target areas was subjected to a vote based on three criteria: the area's importance, the risk it poses, and the feasibility of solving the problem. The vote reduced the list to four key areas. Each member of the team was now given 10 points to use to rank these four problems based on eight criteria: the problem's importance, the level of urgency, the effect of this problem on daily work, the benefits of solving it, the size of the problem, how often it recurs, how much of a risk it poses, and the degree of difficulty in solving the problem.

In addition, the four key areas were analyzed in a pair-wise ranking, which confirmed their selection of the laboratory as the most important improvement opportunity. More specifically, not

enough patients were using the clinic's lab tests requested by physicians, either as part of a physical exam or a sick visit. The problem was important for two reasons:

1. Without the lab tests, the physical exam was essentially incomplete.

2. By conducting the lab test in-house, the clinic had the opportunity to earn revenue which is retained by the clinic.

The team then used clinic data to quantify and analyze the scope of the problem and whether it is amenable to improvement, and specify a target for quantifiable goal. The problem was now defined as: "Only 17 percent of patients having a physical exam used the clinic's lab." The ideal percentage would be 100 percent, because part of every physical exam is a set of standard lab tests. Performing lab tests requested for a physical exam in-house would maximize the doctor's ability to provide continuity of care.

The team now set their goal: "To raise the proportion of patients having a physical exam from 17 percent in June 2004 to 90 percent in December 2004."

The team used five QI tools on which they had been trained to analyze the problem and identify its root causes. They used: flow charts, brainstorming, Pareto analysis, fish bone analysis of causes and effects, and a patient satisfaction survey. The team developed a three-page flow chart showing how patients flow to the clinic's lab and/or to an outside lab (see Figure 2).

Analyzing this detailed flow chart, the team drew up a list of 10 barriers to using the clinic's laboratory. This list was subjected to a Pareto analysis, which revealed three main reasons for the low use of laboratories: no lab technician on board, no monthly calibration of lab equipment, and the microscope being out of order. If those vital few barriers were resolved, the team could achieve their goal of increasing lab use.

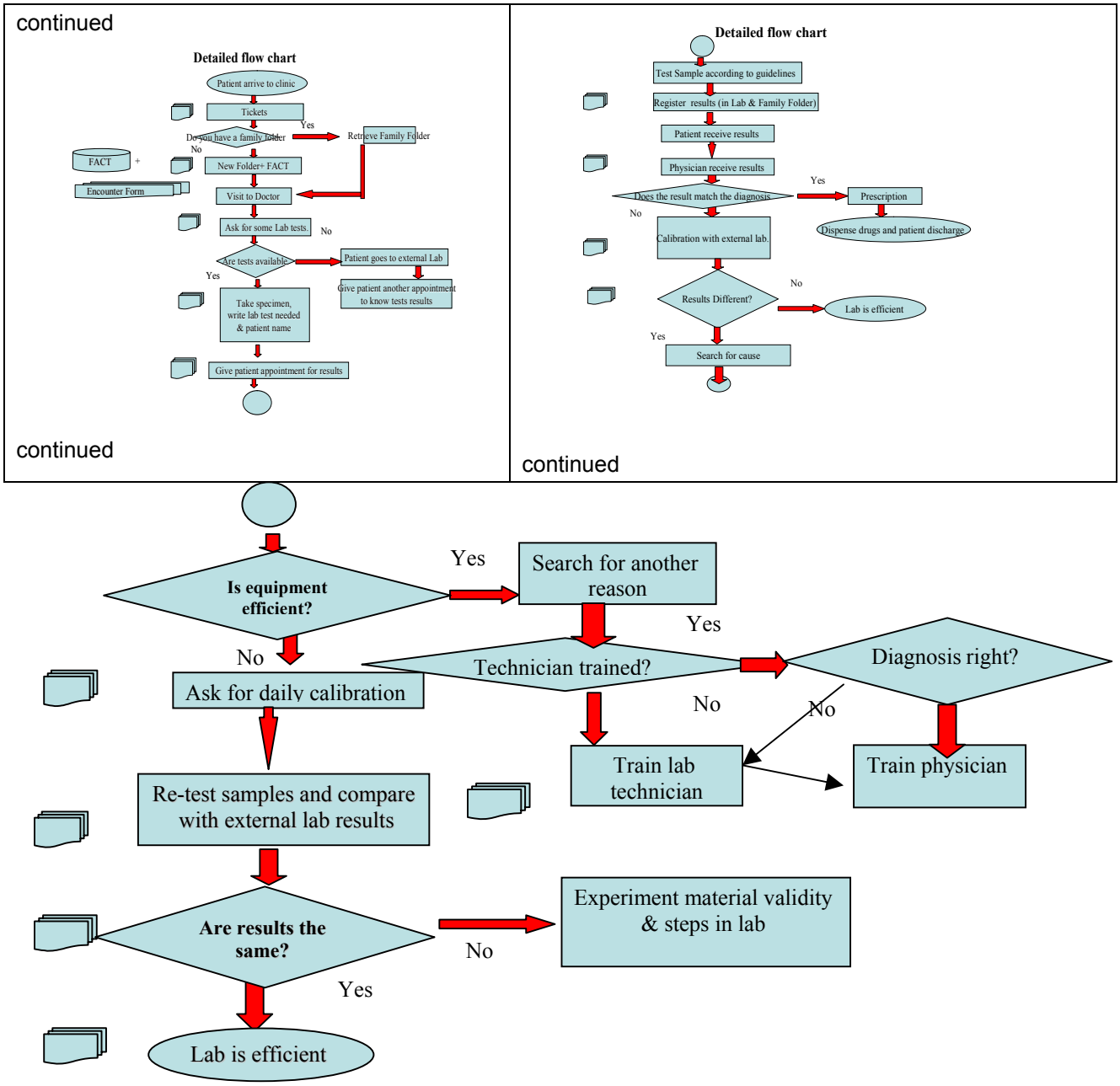
The working group presented their findings on the extent of the problem and the most efficient ways to resolve it to their supervisors – the district team. The district team realized that there was no need to request assistance from upper-level management to have the microscope repaired, and they were able to use their own budget to repair the microscope within three months.

The clinic working group collaborated with the district team to follow the steps needed to hire a lab technician, submitting the request to the health director and then actively following up with the human resource director. Normally, the clinic staff would not follow up their request with the human resource director but would simply wait to see whether their request would be fulfilled or not. As a result of their actively pursuing their request, a lab technician was assigned to the clinic within two months.

The lab technician set up a regular daily calibration checks of the equipment within the clinic, and monthly calibration of the equipment both by having the equipment serviced and by sending samples to outside labs to double-check the lab results.

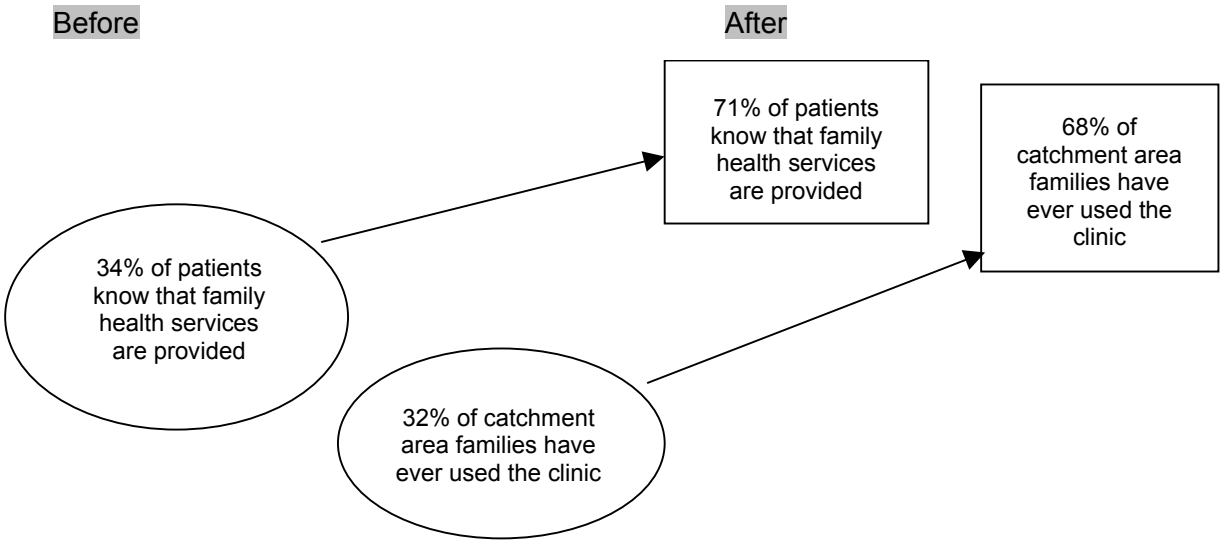
After four months of study, results showed an increase in the number of patients getting their laboratory test in the clinic, from 17 percent in June to 100 percent in October 2004. This indicates that all lab tests requested by physicians for patients doing their physical exam were done in-house. Considering that outpatient medical records are new to Egypt, and considering the difficulty of doctor's following up on a lab test not conducted in-house, this improvement will greatly assist providers in improving the continuity of care they can offer in the El-Suez FHU.

Figure 2. Detailed flow chart analyzing problems faced in the lab and how to overcome them



3.2 Increasing Utilization through Increased Public Awareness at El-Mashrou FHU

Figure 3. Increasing awareness of the services offered leads to higher utilization



The El-Mashrou Family Health Unit, located in the rural area of El-Ganayen district, mainly provides maternal and child health services. The quality improvement team at El-Mashrou FHU is led by the director of the unit, who also led the working group which developed the improvement project described here.

At their first meeting to discuss opportunities for quality improvement, the team identified 12 opportunities, such as incomplete medical records, the low utilization rate at the clinic, understaffing, unsafe waste disposal, lack of computer and telephone, and low patient satisfaction. To reduce this list, the team used three tools:

- They voted based on three criteria (frequency, risk, and how easy it is to solve the problem), and
- They used the five "why" questions
- They then ranked each problem according to nine criteria using one, three, or nine points (more points indicating greater importance).

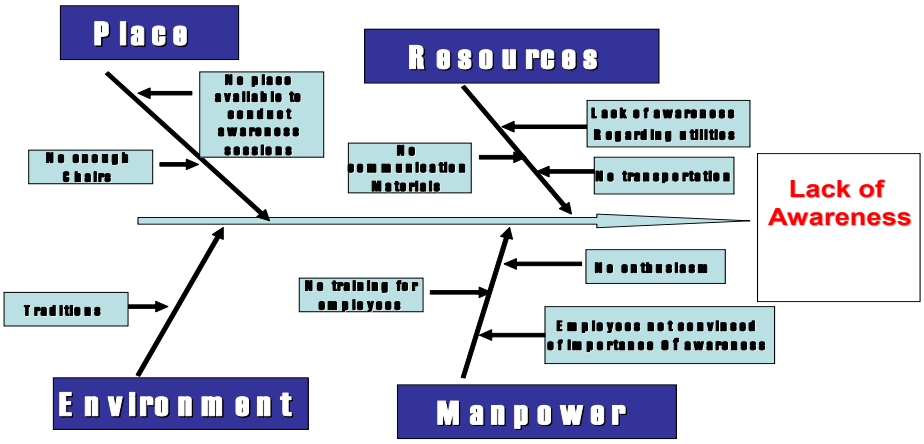
This multi-faceted ranking exercise highlighted the team's assessment that the low utilization rate at the clinic was their most important problem. Lack of awareness contributes to the low utilization rate at the clinic. They set an objective to raise the level of awareness between July and October 2004.

To achieve this objective, the QI team assembled a five-person working group. The team first identified sources of information on the problem: through daily observation, the complaints box, a

patient questionnaire, and using FACT to track the level of utilization. A patient questionnaire was conducted in June 2004 which showed that 66 percent of patients were unaware that the family health model had been implemented at El-Mashrou Clinic.

Through brainstorming, the working group identified nine possible underlying causes for the lack of public awareness. The team developed a fish bone cause and effect diagram showing each of these barriers (Figure 4), and each member of the team assigned to each of these nine causes a score of 1, 3, or 9 using six criteria intended to measure the importance of each cause. Through this analysis, the team identified three key causes: lack of public knowledge about the clinic's resources, lack of informational materials, and lack of staff training on how to raise public awareness.

Figure 4. A fish bone cause & effect diagram showing barriers to public awareness



The group identified three solutions which would directly address these key barriers: hold a refresher course on active communication for the clinic staff, obtain training materials on active communication skills, and hold meetings to inform the public about the new services which are provided through the clinic.

PHR*plus* provided the refresher course, and the staff then obtained printed materials discussing the benefits of the family health services and the importance of medical records. In this rural area, the physician went with other staff to meet with key persons in the village and discuss the objectives of the family health model with villagers, and then these materials were disseminated and discussed with families in the clinic waiting room and at venues outside the clinic.

During the first week of October 2004, a patient questionnaire was conducted using the same group of clients who were interviewed in June 2004. Responses showed an increase in community awareness of the family health services from 34 percent in June to 71 percent in October, and a concomitant increase in utilization, such that in June only 32 percent of the catchment's population had ever visited the clinic, compared to 68 percent in October.

4. Conclusions

It is clear that the QI efforts in Suez led to increased capacity among staff at both the clinic and district levels. Each clinic now has a QI team, with the ability to develop QI plans and implement them without technical assistance. Each facility team is working to improve weak areas, collecting data, keeping accurate documentation, and identifying specific work processes that need improvement.

Similarly, the capacity of mid-level district management also improved. Today, each district team has the ability to manage and supervise work using the new philosophy of quality. Managers serve as coaches and facilitators, overseeing work in a participatory manner.

There also is now a general understanding and commitment among managers and providers to satisfy patients and communities they serve by addressing all aspects of patients' rights. The increased emphasis on the use of policies and procedures in all clinical systems means that staff no longer implement haphazard instructions.

The use of data in decision making is clearly one of the most important achievements of this activity. Clinic QI teams have become more skilled and keen to use data to analyze clinic performance and identify opportunities for improvement. Peer review meetings of all the clinic QI teams in each district provide a frequent opportunity for these teams to learn from each other.

In brief, as one of the managers summarized it: "Now we are able to make a difference in the patients care experience. We are able to improve what we do. We work intimately with our clients and respond quickly to changing situations."